

AN IMPROVEMENT ON A HAIR DRYERBackground of the Invention

The present invention relates to an accessory adapted for  
5 use with a hair dryer. The present invention also relates  
to an improvement on a hair dryer or hair dryer assembly.

10 There are a variety of accessories for use with hair  
dryers. For example, an adapter in the form of a  
concentrator or diffuser may be installed onto a hair dryer  
to regulate the air flow pattern from the hair dryer to  
suit a particular hair styling requirement. Nevertheless,  
it is desirable to have a hair dryer which when equipped  
with such type of accessories, can not only manipulate air  
15 flowing therefrom but also condition hair to be dried or  
styled by the air flowing from the hair dryer.

The present invention seeks to provide an accessory for a  
hair dryer having a novel function. The present invention  
20 also seeks to provide a hair dryer assembly incorporating  
such an accessory, or at least to provide a useful  
alternative to the public.

### Summary of the Invention

According to a first aspect of the present invention, there is provided an accessory adapted for use with a hair dryer comprising a body defining a passageway with at least first and second openings, a connector for connecting said accessory to the hair dryer and at least one retainer adapted to retain a substrate in the passageway.

Preferably, each of the first and second openings may be at a respective longitudinal end of the body. In particular, the connector may be arranged at or adjacent to the first opening of the body. The retainer may be arranged at or adjacent to the second opening of the body. Such arrangement allows air to pass through the passageway from the first opening to the second opening of the body.

Suitably, the body may be connectable to a front end of the hair dryer. Advantageously, the body may be removably connectable to the hair dryer by clipping, snapping or screw-fitting.

Preferably, the substrate may be made of a material selected from a group including ceramics and sponge. The use of ceramics may in particular be desirable because of

its inherent durability under the condition of repeated heating and cooling. However, other suitable materials that may withstand a high temperature may also be used in making the substrate. Specifically, the substrate may be adapted to receive a scented medium. The accessory may comprise the substrate for convenience.

Suitably, the scented medium may be evaporable at an elevated temperature. Preferably, the scented medium may be an aromatic oil.

According to a second aspect of the present invention, there is provided a hair dryer comprising an accessory as described above. The accessory may be built in with the hair dryer.

According to a third embodiment of the present invention, there is provided a hair dryer assembly comprising a hair dryer and an accessory adapted for use therewith, wherein the accessory comprises a body defining a passageway with at least first and second openings, at least one connector for connecting the accessory to the hair dryer and at least one retainer adapted to retain a substrate in the passageway. Preferably, the hair dryer may comprise the

substrate for convenience. Suitably, the substrate may be adapted to receive a scented medium. The scented medium may also be included in the substrate for convenience. In particular, the scented medium may be evaporable when air heated by heating means of the hair dryer passes through the passageway. Air leaving the hair dryer assembly may be enhanced with the aroma of the scented medium.

#### Brief Description of the Drawings

10 The present invention is now described, by way of examples only, with reference to the following drawings in which:-

Figure 1 is a perspective view of an accessory in the form of an adapter according to a first embodiment of the present invention;

15 Figure 2 is a front view of the accessory shown in Figure 1;

Figure 3 is a side view the accessory shown in Figure 1;

Figure 4 is a cross section view of the accessory shown in Figure 1;

20 Figure 5 is a front view of an accessory in the form of an adapter according to a second embodiment of the present invention;

Figure 6 is a cross section view of the accessory shown in Figure 5;

Figure 7 is a cross section view an accessory in the form of an adapter according to a third embodiment of the present invention;

Figure 8 is a front view of the accessory shown in Figure 7;

Figure 9 is a front view of a substrate for use in one of the accessories shown in Figures 1, 5 or 7; and

Figure 10 is a cross section view of a hair dryer according to a fourth embodiment of the present invention.

#### Detailed Description of the Preferred Embodiments

Turning to a first embodiment of the invention, as can be seen in Figures 1 to 4, there is provided an accessory generally designated as 2. The accessory 2 is in the form of an adapter for use with a hair dryer.

The accessory 2 comprises a body 4 generally formed of a housing 6 defining a cavity 8 therein (see Figure 4). A rear opening 10 and a plurality of front openings 12 are provided in the housing whereby air may flow from the rear opening 10 to the front openings 12 via the cavity 8 of the housing 6. A retainer 14 is disposed at the center and in a front region of the body 4. A slot 16, which is circular in shape in this embodiment, is defined by the retainer 14

in which a substrate 18 may be retained. The retainer 14 comprises a circular collar 20 which is closed with a mesh 22 at its front end. A narrower neck region 24 having a number of lugs 26 is provided at a rear end of the retainer 14. The lugs 26 are resilient and can deform slightly when the substrate 18 is inserted to the slot 16 of the retainer 14. Once the substrate 18 is inserted in the slot 16, the lugs 26 will return to their normal position and the substrate 18 is securely held in the retainer 14.

The substrate 18 may be in the form of a tablet sized and shaped to fit tightly in the slot 16. The substrate 18 is made of a material adapted to absorb and be refilled with a scented medium, and preferably comprises cavities 27 for accommodating and retaining a suitable amount of the scented medium. Alternatively, the substrate 14 may be made with the scented medium. It is preferable that the substrate 14 can withstand repeated heating and cooling. One such suitable material of the substrate 14 is ceramic [i.e. Silicon oxide ( $\text{Al}_2\text{O}_3$ )] because it can withstand a high temperature although other suitable materials such as a sponge-type material may be used. The scented medium may preferably be aromatic oil (such as lemon or lavender aromatic oil) which is evaporable at an elevated

temperature relative to an ambient temperature (i.e. room temperature]. The elevated temperature of heated air from a hair dryer is normally 45°C or higher at which level an aromatic oil will usually evaporate. Yet another alternative is that the substrate 14 may be in the form of a disposable scented tablet which can be replaced when its aroma is exhausted.

At a rear end of the accessory 2, a connector 29 in the form of a number of slightly movable legs is provided. The connector 29 allows the accessory 2 to be connected with a front end of a hair dryer. In use, as the rear end of the accessory 2 is positioned in front of the hair dryer, the accessory 2 can be removably connected thereto by pushing towards the hair dryer as the legs deform slightly and clip to an inner rim of the front end of the hair dryer. Alternatively, other forms of connecting or retaining mechanisms may be provided to the accessory according to the invention. For example, the accessory may be adapted to be snap-fitted or screw-fitted to the hair dryer.

In use, a user before a hair drying/styling operation may add a suitable amount of a preferred scented medium to the substrate 18 in the retainer 14 of the accessory 2 which is

then installed to the hair dryer. Once the hair dryer is turned on, air stream generated by a fan of the hair dryer will pass via a passageway defined by a housing of the hair dryer. On leaving the hair dryer, the air stream will enter the rear opening of the accessory 2 and leave the front openings of the accessory 2, passing through or around the substrate 18. In a situation where the scented medium is an aromatic oil and the operating mode of the hair dryer generates unheated air stream, minimal amount of the aromatic oil is evaporated because aromatic oils are usually evaporable only at an elevated temperature (i.e. usually 45°C or above). In such case, the air stream leaving the front opening of the accessory 2 will have little or no scent of the aromatic oil. However, when the operating mode of the hair dryer generates heated air stream, heated air passing through or around the substrate will evaporate the aromatic oil and air flowing from the front openings of the accessory 2 will carry and is enhanced with the aroma of the oil. Hair blown, dried and styled by such air flowing will acquire the aroma as well. The use of the hair dryer with the accessory 2 according to the invention allows blow-drying and fragrance acquiring on the hair in one step. The emission of aroma by the substrate 18 is to be conveniently controlled by the heated



or non-heated mode of the hair dryer as selected by the user. In an event that the substrate 18 is loaded with a scented medium which is evaporate but not dependent on temperature, scented air stream may be generated in  
5 whichever of the operation modes.

Figures 5 and 6 show a second embodiment of an accessory 32 also in the form of an adapter for use with a hair dryer. The accessory 32, similarly includes a retainer 34 for  
10 housing a substrate 36 and a connector 38 for connecting the accessory 32 with a hair dryer. The main difference between this embodiment and the first embodiment is that the accessory 32 is in the form of a concentrating adapter to confine air flowing from the hair dryer, while the  
15 accessory 2 shown in Figures 1 to 4 is in the form of an adapter for diverging air flowing from the hair dryer.

Figures 7 and 8 show a third embodiment of the invention in that an accessory 42 also in the form of an adapter which  
20 is similar to the accessories 2, 32 in the first and second embodiments. However, the necessary 42 is adapted to allow diffusing air flowing from a hair dryer. A substrate 44 is similarly situated in a retainer 46. It can also be seen

that a rear portion 48 of the accessory 42 is sized and shaped to fit to an outer rim of a hair dryer.

Figure 9 shows a substrate (18, 36 or 44) which may be used in any one of the accessories (2, 32 and 42). It can be seen that a plurality of the cavities 27 are provided for accommodating an aromatic oil.

Figure 10 illustrates a fourth embodiment of the invention, and shows a cross section view of a hair dryer assembly 52 comprising a hair dryer incorporated with an adapter 54. The adapter 54 is generally similar to any one of the accessories (2, 32 and 42) in the first, second and third embodiments. The adapter 54 similarly comprises a retainer 56 having a substrate 58 therein and arranged in a front portion of the hair dryer. The adapter 54 also comprises a connector 60 for connecting to a front rim of the hair dryer.

It can be appreciated that the adapter 54, similar to the accessories in the other three embodiments, can be adapted to be removably and conveniently connected to the hair dryer. Alternatively, the hair dryer can be made integrally with the adapter 54. In the latter case, the

retainer 56 can be designed such that the substrate 58 can be inserted therein from its front end.

As clearly shown in Figure 10, when the hair dryer assembly  
5 52 is operational, air is drawn from its surroundings 62 into the rear end thereof, passing through a fan and a heater 64. Heated air will pass through or around the substrate 58 situated in the retainer 56. A scented medium received in the substrate 58, e.g. aromatic oil, on passing  
10 of the heat air, will evaporate and air leaving the adapter 54 will carry the aroma of the scented medium.